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Hideaki Kimata

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EXAMINER

THOMPSON, JAMES A

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2625

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,903	Applicant(s) KIMATA ET AL.	
	Examiner James A. Thompson	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/21/10, 4/1/10, 12/7/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-15, 18, 21, 24, 30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15, 18, 21, 24, 30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/7/05, 4/1/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Examiner notes Applicant's amendments to the claims filed 21 July 2010 in response to the Restriction requirement of 24 June 2010.

Information Disclosure Statement

2. The Information Disclosure Statements (PTO-1449) of 01 April 2010 and 07 December 2005 have both been fully considered by Examiner. Signed, initialed and dated copies are included with the present action.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 9-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.** Claim 9 recites an image decoding method.

However, the recited method is not a statutory process. The recited method comprises internal mathematical manipulations of digital data. The method is not tied to any particular machine, nor does the method transform any underlying subject matter. The method does not produce any concrete, tangible and useful result. Rather, the method merely takes one set of digital data, performs internal manipulations upon the data, and then stores the resultant data. Thus, the

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method does not relate to a practical application, but to an abstract idea. Therefore, the method of claim 9 is non-statutory.

Claims 10-15 each ultimately depend from claim 9. Further, none of claims 10-15 recite subject matter that would place the claim within one of the statutory classes of invention. Thus, claims 10-15 are also non-statutory.

5. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 21 recites an image decoding method. However, the recited method is not a statutory process. The recited method comprises internal mathematical manipulations of digital data. The method is not tied to any particular machine, nor does the method transform any underlying subject matter. The method does not produce any concrete, tangible and useful result. Rather, the method merely takes one set of digital data, performs internal manipulations upon the data, and then stores the resultant data. Thus, the method does not relate to a practical application, but to an abstract idea. Therefore, the method of claim 21 is non-statutory.

6. Claim 30 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 30 recites an image decoding program, and is thus a program listing *per se*. A program listing *per se* is non-statutory. See MPEP § 2106.01(I).

7. Claim 32 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 32 recites a recording medium recording an image

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decoding program. As recited, claim 32 could be the text of a high-level programming language printed out in a book or stored as a text file on a computer disk. A program listing *per se* is non-statutory. See MPEP § 2106.01(I). Examiner respectfully suggests Applicant amend the relevant language of claim 32 to read “computer-readable recording medium storing a computer-executable image decoding program” in order to place claim 32 within one of the statutory classes of invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 9, 10, 18, 21, 24, 30 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Winger (US-2004/0013199).**

Regarding claim 9: Winger discloses an image decoding method for decoding image data formed by a plurality of frames (**fig. 1(26-40) and para. 56, line 19 to para. 57, line 6 of Winger**), the image decoding method characterized by having: a current category decoding step for decoding a category number of a current frame (**fig. 3 and para. 66 of Winger – *category of current frame is determined and later used for decoding***); a reference image specifying data decoding step for decoding a reference image specifying data which specifies a reference image data, for said decoded category number (**fig. 3 and para. 66-67 of Winger – *frame decoded based on category of frame and earlier I or P frame***); a predicted image producing step for

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producing a predicted image from an image data specified by said reference image specifying data (**para. 67 of Winger**); a difference decoding step for decoding a difference between a decoded image of the current frame and the predicted image (**para. 70 of Winger**); a decoded image producing step for producing the decoded image of the current frame from said decoded difference data and said predicted image (**para. 64 of Winger**); and a decoded image storing step for storing said produced decoded image data of the current frame into a reference image memory for said decoded category number (**fig. 3 and para. 64-66 of Winger** – *decoded reference images stored for decoding inter frame images which rely upon the difference between the stored decoded reference image and the residuals*).

Regarding claim 10: Winger discloses said reference image specifying data is formed by a category number to which the reference image data to be read from said reference image memory by said predicted image producing step belongs (**fig. 3 and para. 65-66 of Winger** – *I, P or B is set when encoded and is referred to later for decoding the frame*) and a frame number for specifying a frame belonging to a category specified by that number (**fig. 3 and para. 66 of Winger** – *frame numbers are correlated with I, P and B categories*).

Regarding claim 18: Winger discloses an image decoding device for decoding image data formed by a plurality of frames (**fig. 1(26-40) and para. 56, line 19 to para. 57, line 6 of Winger**), the image decoding device characterized by comprising: a reference image memory for a plurality of frames which are classified into N sets ($N \geq 2$) of categories (**fig. 3 of Winger** – *frames are stored as one of three possible classifications*); a current category decoding unit for decoding a category number of a current frame (**fig. 3 and para. 66 of Winger** – *category of current frame is determined and later used for decoding*); a reference image specifying data

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decoding unit for decoding a reference image specifying data which specifies a reference image data, for the category number obtained by said current category decoding unit (**fig. 3 and para. 66-67 of Winger** – *frame decoded based on category of frame and earlier I or P frame*); a predicted image producing unit for producing a predicted image from an image data specified by said reference image specifying data (**para. 67 of Winger**); a difference decoding unit for decoding a difference between a decoded image of the current frame and the predicted image (**para. 70 of Winger**); a decoded image producing unit for producing the decoded image of the current frame from said decoded difference data and said predicted image (**para. 64 of Winger**); and a decoded image storing unit for storing said produced decoded image data of the current frame into the reference image memory for the category number obtained by said current category decoding unit (**fig. 3 and para. 64-66 of Winger** – *decoded reference images stored for decoding inter frame images which rely upon the difference between the stored decoded reference image and the residuals*).

Regarding claim 21: Winger discloses an image decoding method for decoding image data formed by a plurality of frames (**fig. 1(26-40) and para. 56, line 19 to para. 57, line 6 of Winger**), the image decoding method characterized by executing: a current category decoding step for decoding a category number of a current frame (**fig. 3 and para. 66 of Winger** – *category of current frame is determined and later used for decoding*); a reference category setting step for setting a category that can be referred at a time of decoding a frame of a category to which the current frame belongs (**fig. 3 and para. 65-66 of Winger** – *I, P or B is set when encoded and is referred to later for decoding the frame*); a reference image specifying data setting step for setting a reference image specifying data, for an image data of a frame stored in a

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reference image memory, which belongs to the category that can be referred that is set by said reference category setting step (**para. 66 of Winger** – *stored reference frame specified as reference frame so that proper decoding of current frame can be performed*); a reference image specifying data decoding step for decoding the reference image specifying data which specifies a reference image data (**fig. 3 and para. 66-67 of Winger** – *frame decoded based on category of frame and earlier I or P frame*); a predicted image producing step for producing a predicted image from an image data specified by the reference image specifying data (**para. 67 of Winger**); a difference decoding step for decoding a difference between a decoded image of the current frame and the predicted image (**para. 70 of Winger**); a decoded image producing step for producing the decoded image from a difference data and the predicted image (**para. 64 of Winger**); and a decoded image storing step for storing the decoded image of the current frame into the reference image memory for the category number obtained by said current category decoding step (**fig. 3 and para. 64-66 of Winger** – *decoded reference images stored for decoding inter frame images which rely upon the difference between the stored decoded reference image and the residuals*).

Regarding claim 24: Winger discloses an image decoding device for decoding image data formed by a plurality of frames (**fig. 1(26-40) and para. 56, line 19 to para. 57, line 6 of Winger**), the image decoding device characterized by comprising: a reference image memory for a plurality of frames which are classified into N sets ($N \geq 2$) of categories (**fig. 3 of Winger** – *frames are stored as one of three possible classifications*); a current category decoding unit for decoding a category number of a current frame (**fig. 3 and para. 66 of Winger** – *category of current frame is determined and later used for decoding*); a reference category setting unit for

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setting a category that can be referred at a time of decoding a frame of a category to which the current frame belongs (**fig. 3 and para. 65-66 of Winger** – *I, P or B is set when encoded and is referred to later for decoding the frame*); a reference image specifying data setting unit for setting a reference image specifying data, for an image data of a frame stored in said reference image memory, which belongs to the category that can be referred that is set by said reference category setting unit (**para. 66 of Winger** – *stored reference frame specified as reference frame so that proper decoding of current frame can be performed*); a reference image specifying data decoding unit for decoding the reference image specifying data which specifies a reference image data (**fig. 3 and para. 66-67 of Winger** – *frame decoded based on category of frame and earlier I or P frame*); a predicted image producing unit for producing a predicted image from an image data specified by the reference image specifying data (**para. 67 of Winger**); a difference decoding unit for decoding a difference between a decoded image of the current frame and the predicted image (**para. 70 of Winger**); a decoded image producing unit for producing the decoded image from a difference data and the predicted image (**para. 64 of Winger**); and a decoded image storing unit for storing the decoded image of the current frame into the reference image memory for the category number obtained by said current category decoding unit (**fig. 3 and para. 64-66 of Winger** – *decoded reference images stored for decoding inter frame images which rely upon the difference between the stored decoded reference image and the residuals*).

Regarding claim 30: Winger discloses an image decoding program for causing a computer to execute the image decoding method (**para. 103 of Winger**) as described in any one of claims 9 or 21 (*rejected above as being disclosed by Winger*).

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Regarding claim 32: Winger discloses a recording medium recording an image decoding program for causing a computer to execute the image decoding method (**para. 103 of Winger**) as described in any one of claims 9 or 21 (*rejected above as being disclosed by Winger*).

Allowable Subject Matter

10. Claims 11-15 recite potentially allowable subject matter. However, claims 11-15 are presently rejected under 35 U.S.C. § 101. Thus, the rejections of claims 11-15 under 35 U.S.C. § 101 must be successfully resolved before any allowable subject matter can properly be noted.

Claim 11, which depends from independent claim 9, recites that said reference image specifying data decoding step has a tentative frame number setting step for setting a tentative frame number with respect to the image data of a frame belonging to an i-th category, among a plurality of image data stored in said reference image memory, and a tentative frame number decoding step for obtaining the tentative frame number which specifies an image data to be selected at said predicted image producing step, by decoding the reference image specifying data.

Examiner has not discovered in the prior art each and every feature recited in claim 11. Thus, claim 11 is deemed to potentially contain allowable subject matter. Claim 12-15 each ultimately depend from claim 11, and therefore also potentially contain allowable subject matter.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is (571)272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A Thompson/
Primary Examiner, Art Unit 2625

16 September 2010